

4. (Amended) The method of claim 6, wherein the physiological response comprises vasoconstriction.

5. (Amended) The method of claim 6, wherein the physiological response comprises reduction in blood flow out of a breached vessel.

6. (Amended) A method for achieving at least a transient, localized, modulation of vascular structure and/or function, comprising:

B<sup>2</sup> topically administering to a patient in need of said modulation, a sufficient amount of material comprising semi-crystalline poly- $\beta$ -1 $\rightarrow$ 4 N-acetylglucosamine polymers, wherein the poly- $\beta$ -1 $\rightarrow$ 4 N-acetylglucosamine polymer comprises about 50 to about 150,000 N-acetylglucosamine monosaccharides covalently attached in a  $\beta$ -1 $\rightarrow$ 4 conformation, and said polymer has a molecular weight of about 10,000 daltons to about 30 million daltons, and wherein said sufficient amount achieves at least a transient, localized physiological response selected from the group consisting of stimulation of endothelin-1 release, vasoconstriction, and reduction in blood flow out of a breached vessel,

whereby the patient experiences at least a transient, localized modulation of vascular structure and/or function.

7. (Amended) The method of claim 6, wherein the poly- $\beta$ -1 $\rightarrow$ 4 N-acetylglucosamine polymer comprises about 50 to about 50,000 N-acetylglucosamine monosaccharides covalently attached in a  $\beta$ -1 $\rightarrow$ 4 conformation, and said polymer has a molecular weight of about 10,000 daltons to about 10 million daltons.

10. (Amended) The method of claim 6, wherein the semi-crystalline poly- $\beta$ -1 $\rightarrow$ 4 N-acetylglucosamine polymer comprises at least one non-acetylated glucosamine monosaccharide unit, and wherein at least 40% of said glucosamine monosaccharide units are N-acetylated.

B<sup>3</sup> 11. (Amended) The method of claim 6, wherein the patient is a human.

12. (Amended) The method of claim 6, wherein the material is in the form of a gel, sponge, film, membrane, foam, spray, emulsion, suspension, or solution.

B<sup>3</sup>  
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13. (Amended) The method of claim 6, wherein the material is applied directly to a blood vessel.

14. (Amended) The method of claim 6, wherein the vascular structure is a blood vessel selected from the group consisting of capillary, vein, and artery.

B<sup>4</sup>  
17. (Amended) The method of claim 6, wherein the extent of the transient, localized modulation of vascular structure and/or function is substantially proportional to the amount of semi-crystalline poly- $\beta$ -1 $\rightarrow$ 4 N-acetylglucosamine administered.

24. (Amended) A method for treating a patient having a vascular disorder, comprising:

B<sup>5</sup>  
topically administering to a patient in need of such treatment, a sufficient amount of material comprising semi-crystalline poly- $\beta$ -1 $\rightarrow$ 4 N-acetylglucosamine polymers, wherein the poly- $\beta$ -1 $\rightarrow$ 4 N-acetylglucosamine polymer comprises about 50 to about 150,000 N-acetylglucosamine monosaccharides covalently attached in a  $\beta$ -1 $\rightarrow$ 4 conformation, and said polymer has a molecular weight of about 10,000 daltons to about 30 million daltons, and wherein said sufficient amount achieves at least a transient, localized physiological response selected from the group consisting of stimulation of endothelin-1 release, vasoconstriction, and reduction in blood flow out of a breached vessel, whereby the patient experiences at least a transient, localized modulation of vascular structure and/or function,

whereby said administering ameliorates said vascular condition.

26. (Amended) The method of claim 6, wherein said polymers are substantially free of protein.

B<sup>6</sup>  
27. (Amended) The method of claim 6, wherein said polymers are substantially free of organic contaminants.

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28. (Amended) The method of claim 6, wherein said polymers are substantially free of inorganic contaminants.

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